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PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE
(Live-stock Branch).



THOUSAND-HEADED KALE.

By H. RIVE, PROVINCIAL DAIRY INSTRUCTOR.

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THOUSAND-HEADED KALE has been grown extensively for many years in Great Britain, in common with numerous varieties of rape and cabbage. Introduced about thirty-five years ago into Oregon, where it yields, under favourable conditions, over 35 tons of green food per acre, its popularity in that State as a forage crop is great. It appears well up on the list of such plants experimented with at the Ontario Agricultural College, attaining a height of 35 inches, and furnishing 25.5 tons per acre as an average for six years.

Thousand-headed kale is hardier than most varieties of the cabbage family, and less subject to injury from disease and insects than the Scotch and curled varieties. It is found that until a temperature below 10 degrees Fahr. is reached, no harm is experienced by this plant in the field.

As a fodder it is exceedingly nutritious, suitable for fall and early winter feeding. It prolongs the season of green foods, is a good soiling crop, and, where corn cannot be profitably grown, replaces silage. It is an excellent food for dairy cows, helping admirably in the economic production of milk, and is well suited for hogs, sheep, and poultry also.

Chemical analysis shows an average of about 2.5 per cent. protein in mature plants, and of 20 per cent. in the dry substance. The percentage of digestible protein is reckoned as over 11 per cent. of the dry matter, which indicates, in view of the yield obtained, the high value of kale as a forage crop.

Considerable variation exists, however, in the types of individual plants. Some are more susceptible to frost than others, and big differences in the yield per acre and the protein content are also found. The experience of growers in the Willamette Valley is that plants with narrow leaves, growing low down on the stalk, yield more and are less liable to injury from freezing than those with stalks bare for a greater space above the ground, and advise the selection of the former type for seed production. Kale, like rape, is biennial in character, producing seed only when it has attained its second year's growth. It is wise, in the spring before seedling, to remove the plants selected to some isolated place to prevent cross-fertilization by closely related kale-plants either wild or cultivated, and consequent deterioration in yield and feeding value.

SOIL.

Kale will grow in any soil of normal fertility, but it does best on deep, warm, well-drained soils such as sandy loams. Thorough tillage is essential, and a generous application of manure to most soils profitably increases the yield. This plant is a rank feeder, and removes considerable potash and phosphoric acid from the land, making it imperative that a sufficiency of these be present in available form. The effects of nitrogenous fertilizers are very beneficial.

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The land should be heavily manured and ploughed in the fall preceding. Reploughing in the spring, which may be advisable on some soils and in places where a fair summer rainfall occurs, should be shallow and performed early. In general, thorough and repeated cultivation and harrowing at this season will be sufficient to bring the land into suitable physical condition, conserve the moisture, and destroy weeds.

SOWING THE SEED AND TRANSPLANTING.

The month of April, with the fore part of May, appears a suitable time for sowing kale in British Columbia. The seed should be sown in drills or in flat beds on well-prepared, well-drained soil. One pound of seed will furnish more than enough plants for one acre. Keep the patch clean, and stir the soil around to prevent evaporation and to promote growth.

The earlier the plants are ready for transplanting the better, for if this operation occurs much later than June the crop may be held back by drought during the succeeding months. Remove the plants from the original drills carefully, leaving those not required at this time sufficient room for growth. Make provision for replacing plants that do not survive transplanting. A plan followed with good success when transplanting cabbage is to prepare pails half full of a sloppy mixture of manure and muck, in which the roots of the young plants are placed when taken from the seed-bed, remaining there until set out in the field. The plants at this time should be about 8 or 10 inches high.

Where only a small acreage is to be considered, the transplanting can be done by marking the rows and using a spade. Thrust the spade deeply into the ground, push to one side, insert the kale-root, and allow the mellow surface soil to close in while withdrawing the spade. Firm around the plant with the foot. If the land is dry, the addition of water is beneficial. Transplanting of larger quantities of plants may be done by ploughing, then placing the young plants 3 feet apart in furrows the same distance away from each other. Rolling, after transplanting in this manner, is recommended to make the soil firm and compact.

After transplanting, cultivate frequently, while the size of the plants permits.

FEEDING.

Feeding may commence in October, though kale will continue to grow till the winter comes on. If the growth has been forced, it may be fed earlier than October, and the practice is adopted by some of stripping the lower leaves in the early part of the feeding season. This prevents loss by feeding the whole plant before it has attained its full growth. It stands in the field until required, when the stalk is cut off at the ground. Enough may be hauled in at a time to last four or five days, but it should not be thrown into heaps and allowed to heat. Do not feed wet or frozen kale.

Thirty or 35 lb. of kale may be fed a cow milking. This, in combination with hay of good quality, clover, alfalfa, or vetch and oats will assist materially in keeping down the amount of grain necessary to the ration.

The famous Jersey cow "Adelaide of Beechlands" gave during two separate months, while on test, the following amounts:—

1,228.40 lb. milk,	76.37 lb. fat;
1,420.60	64.84

The daily rations fed were, respectively:—

Kale, 40 lb.; alfalfa, 15 lb.; clover hay, 7 lb.; oats, 2 lb.; bran, 3 lb.; oilmeal, ½ lb. Dry matter, 30 lb.; protein, 3.88 lb.; carb. and fat, 14.5 lb.; N.R. 1: 3.6.
Kale, 40 lb.; alfalfa, 15 lb.; clover hay, 7 lb.; oats, 3 lb.; oilmeal, 1 lb. Dry matter, 30.42 lb.; protein, 3.87 lb.; carb. and fat, 15 lb.; N.R. 1: 3.9.

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